

Final Report for the OKI Project
A Cross-cultural Study on Colour Emotion and Colour Harmony in
Association with the Ultra-colour System

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Abstract

This report includes two psychophysical experiments: 1) the relationship between colour combinations and adjective combinations and 2) the verification of the Wright theory on colour harmony. Both experiments were carried out in the 5 countries: Britain, France, Germany, Spain, and Sweden. A total of 47 females and 72 males took part in Experiment 1; 48 females and 71 males in Experiment 2.

In the first experiment, 100 adjectives and 32 colours were used as stimuli presented on a calibrated Cathode Ray Tube (CRT) display. All the colour stimuli were selected evenly from the 4 colour groups, CG 1 to CG 4, defined by the Ultra-colour system, and so were the adjectives, from AG 1 to AG 4. Five-colour combinations and 5-adjective combinations were generated from the stimuli. In the experiment, for each judgement an adjective combination and 4 colour combinations were presented simultaneously on screen and observers were asked to select one of the 4 colour combinations that appeared in correlation with the adjective combination presented. Experimental results show good agreement between observer responses and the Wright theory in AG 2.

In Experiment 2, the colour stimuli were the same as those used in Experiment 1. From these colours, 2 sets of five-colour combinations were generated, each containing 224 colour combinations. In Set 1 each colour combination was generated by the guideline of Wright theory, i.e. the colours in a colour combination were all from the same CG. In Set 2 each colour combination was a copy of a Set 1 colour combination where a component colour was replaced by one from a different CG. Experimental results show good agreement between observer response and the Wright theory in all the CGs.

The experimental results were compared between the observer groups. The Spanish data were found in best agreement with the other observer groups, followed by German, Swedish, Chinese, French, and British-2. The British-1 data were found in poor correlation with all the other groups.